

**REMARKS**

Applicant has carefully reviewed and considered the Office Action mailed on April 1, 2005, and the references cited therewith.

Claims 4, 27 and 31 are amended to simply clarify that the “count” recited in these claims is the “aggregate count”. The claim amendments were in no way made to overcome a substantive rejection. In fact an aggregate count is the only count recited in the claims so the antecedent basis for “count” in these claims would be the “aggregate count” even without these amendments. Claims 32-34 were added. Claims 1-34 are now pending in this application.

**§112 Rejection of the Claims**

**Claims 28-31 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.** The Applicant respectfully traverses the rejection.

The Examiner contends that Ethernet is a trademark and/or trade name and as such identifies a source of goods and not the goods themselves and therefore does not describe the goods. The Examiner correctly notes that Ethernet identifies a particular high-speed LAN protocol. However, the Examiner submits that such a description is indefinite. The Applicant respectfully submits that Ethernet represents a definite good (a card accepting data having a particular protocol) and is clearly not limited to the source of the goods and as such is definite. The Applicant respectfully submits that the Examiner should withdraw the rejection.

**§102 Rejection of the Claims**

**Claims 1-5, 7, 8, 11-14, 19-21, 23, 24, and 27 were rejected under 35 USC § 102(e) as being anticipated by *Van Wageningen et al. (U.S. Publication No. 2003/0152082)*.** The Applicant respectfully traverses the rejection.

For a claim to be anticipated under 35 USC § 102, a single reference must disclose each and every element and each and every relationship between elements. The Applicant submits that *Van Wageningen et al.* do not disclose each and every element or each and every

relationship of claims 1-5, 7, 8, 11-14, 19-21, 23, 24, and 27 as suggested by the Examiner for at least the reasons detailed below.

Independent claim 1 is directed to an apparatus that includes a plurality of flow controllable queues containing data to be transmitted. The flow controllable queues are organized by flow. A plurality of destinations receive data from the plurality of flow controllable queues. A controller continually maintains an aggregate count of data ready for transmission to the destinations and determines next queue to transmit data from based at least partially on the aggregate counts. The Applicant submits that *Van Wageningen et al.* do not disclose each and every element and relationship of the apparatus recited in claim 1. For example, *Van Wageningen et al.* clearly do not disclose maintaining a continuous aggregate count of data ready for transmission to destinations, as required by claim 1.

Rather *Van Wageningen et al.* disclose port control systems that include a storage unit to store data in queues and another storage unit to store statuses for the queues. The system generates and updates weightings for the queues and sends them to an arbiter to perform switching. A two-pronged round robin (updated weightings, unchanged weightings) is used to determine when to send weightings to the arbiter. The weightings may include information about the priority and classification of the packets, queuing time or queue size. There is clearly no disclosure or suggestion of maintaining an aggregate count of data for a destination (e.g., output port), let alone a controller continually maintaining an aggregate count and determining the next queue to transmit data from based on the aggregate count for a destination.

The Examiner contends that the controller maintaining a continuous aggregate count is disclosed in paragraphs 43-46 of the cited reference with respect to the functions of the arbiter. It appears to the Applicant that the Examiner is equating the arbiter of the cited reference to the controller recited in the claim. The Applicant submits that this contention is erroneous. Initially the Applicant points out that the arbiter is not keeping a count, let alone an aggregate count, of data for a specific destination. Rather, the arbiter is receiving weightings (data regarding the queues) that are transmitted to it. Additionally, the weightings are not continually transmitted to the arbiter. Rather the weightings are transmitted in accordance with the two-pronged round robin and have limits to how often they can be sent. Accordingly, there is no way that the arbiter

can have a continuous count of data, let alone a continuous aggregate count of data associated with destinations, as required by claim 1.

For at least the reasons discussed above, the Examiner has failed to establish a prima facie case of anticipation as each and every element and each and every relationship is clearly not disclosed by *Van Wageningen et al.* Therefore, the Applicant submits that claim 1 is clearly patentable over *Van Wageningen et al.* Claims 2-5, 7, 8, and 11-14 depend from claim 1 and are therefore submitted to be patentable over *Van Wageningen et al.* for at least the same reasons discussed above with respect to claim 1 and for the further features recited therein.

For example, claim 13 recites that the aggregate count is updated each clock cycle. As previously mentioned the cited reference discusses weightings being transmitted in accordance with a round robin scheme. If all weightings are not transmitted each clock cycle there is no way there can be an update to a count, let alone an aggregate count, each cycle. The Examiner relies on paragraph 9 of the cited reference for disclosing this feature. However, paragraph 9 clearly contradicts the Examiners contention as it states that a limited number of updated weightings can be sent each clock cycle. The Applicant submits that claim 13 is patentable over the cited reference for at least this additional reason.

The Applicant respectfully submits that the rejection of claims 1-5, 7, 8, and 11-14 should accordingly be withdrawn.

Independent claim 19 is directed to a method that includes creating a plurality of queues based on at least some subset of source, destination, protocol, and class of service. The data received in a first one of the plurality of queues is stored based on the flow of the data. The data transmitted from a second one of the plurality of queues is removed. A continuous aggregate count of data eligible for transmission to the destinations is maintained. A next queue is selected to transmit data from based at least in part on the aggregate counts. The Applicant submits that *Van Wageningen et al.* do not disclose each and every element and relationship of the method recited in claim 19. For example, *Van Wageningen et al.* clearly do not disclose maintaining a continuous aggregate count of data ready for transmission to destinations, as required by claim 19.

For reasons at least similar to those advanced above with respect to claim 1, the Applicant submits that the Examiner has clearly not established a *prima facie* case of anticipation. Accordingly, claim 19 is submitted to be patentable over the cited reference. Claims 20, 21, 23, 24 and 27 depend from claim 19 and therefore are submitted to be patentable over the cited reference for at least the same reasons as claim 19 and for the further features recited therein. The Applicant respectfully submits that the rejection of claims 19-21, 23, 24 and 27 should accordingly be withdrawn.

*§103 Rejection of the Claims*

**Claims 28-31 were rejected under 35 USC § 103(a) as being unpatentable over *Van Wageningen et al.* in view of *Oelke et al.* (U.S. Publication No. 2003/0200330).** The Applicant respectfully traverses the rejection.

Independent claim 28 is directed to a store and forward device that includes a plurality of Ethernet cards to receive, store, and transmit data. The plurality of Ethernet cards include a plurality of ingress ports, a plurality of egress ports, and a plurality of queues. A processor maintains a continuous aggregate count of amount of data queued for the egress ports. A backplane connects the plurality of Ethernet cards together. A scheduler to determine a next queue to service based at least in part on the aggregate counts.

The Applicant submits that neither of the references, whether taken alone or in any reasonable combination, disclose or suggest all of the features of claim 28. For example, neither of the references disclose or suggest a processor maintaining a continuous aggregate count, as required by claim 28. For at least reasons similar to those advanced above with respect to claim 1, the Applicant submits that *Wageningen et al.* clearly do not disclose a continuous count or an aggregate count, let alone a processor maintaining a continuous aggregate count as required by claim 28. The Examiner does not rely on *Oelke et al.* for disclosing this feature that is deficient from the teachings of *Wageningen et al.* and the Applicant submits that *Oelke et al.* do not disclose or suggest these features. Therefore, even assuming arguendo that there was sufficient motivation to combine these references (without conceding or acknowledging that there is), the combination would not result in an embodiment such as that described in claim 28.

For at least the reasons noted above, the Applicant submits that claim 28 is patentable over the cited references. Claim 29-31 depend from claim 28 and are therefore submitted to be patentable for at least the reasons discussed above with respect to claim 28 and for the further features recited therein. Accordingly, the Applicant respectfully submits that the rejection of claims 28-31 should be withdrawn.

**Claims 9, 10, 15-18, 25 and 26 were rejected under 35 USC § 103(a) as being unpatentable over *Van Wageningen et al.* in view of *Ahlfors et al.* (U.S. Publication No. 2002/0126683).** The Applicant respectfully traverses the rejection.

Claims 9, 10 and 15-18 depend from claim 1. The Examiner does not rely on *Ahlfors et al.* for disclosing the features of claim 1 that are deficient from the teachings of *Wageningen et al.* (e.g., a controller maintaining a continuous aggregate count). The Applicant submits that *Ahlfors et al.* do not disclose or suggest these features. Therefore, even assuming arguendo that there was sufficient motivation to combine these references (without conceding or acknowledging that there is), the combination would not result in an embodiment such as that described in claim 1 or any of those that depend therefrom.

The Applicant submits that claims 9, 10 and 15-18 are patentable over the cited references for at least the reasons noted above as well as for the further features recited in these dependent claims. For example, claim 9 recites that data is removed from the aggregate count if a flow control is deactivated for an associated queue, and claim 10 recites that data is added to the aggregate count if a flow control is activated for an associated queue. The Examiner does not contend that *Wageningen et al.* disclose or suggest these features and Applicant submits that *Wageningen et al.* do not disclose or suggest these features. The Examiner contends that *Ahlfors et al.* disclose these features at paragraph 42. The Applicant submits that the Examiner's contention is erroneous. While paragraph 42 may mention keeping track of active queues the active queues are those queues having data and deficient (remaining allotment) and are not queues that have been flow controlled (activated or deactivated so they are not considered for transmission regardless of whether they contain data or not). Moreover, there is no disclosure or suggestion that the active queues are added or subtracted from an aggregate count. Claims 9 and 10 are submitted to be patentable over the cited references for these additional reasons. The

Applicant respectfully requests that the Examiner withdraw the rejection of claim 9,10, and 15-18.

Claims 25 and 26 depend from claim 19. The Examiner does not rely on *Ahlfors et al.* for disclosing the features of claim 19 that are deficient from the teachings of *Wageningen et al.* (e.g., maintaining a continuous aggregate count). The Applicant submits that *Ahlfors et al.* do not disclose or suggest these features. Therefore, even assuming arguendo that there was sufficient motivation to combine these references (without conceding or acknowledging that there is), the combination would not result in an embodiment such as that described in claim 19 or any of those that depend therefrom.

The Applicant submits that claims 25 and 26 are patentable over the cited references for at least the reasons noted above as well as for the further features recited in these dependent claims. For example, claims 25 and 26 are submitted to be patentable for at least additional reasons similar to those addressed above with respect to claims 9 and 10. The Applicant respectfully requests that the Examiner withdraw the rejection of claim 25 and 26.

**Claims 6 and 22 were rejected under 35 USC § 103(a) as being unpatentable over *Van Wageningen et al.* in view of *Woo et al.* (U.S. Publication No. 2003/0112817).** The Applicant respectfully traverses the rejection.

Claim 6 depends from claim 1. The Examiner does not rely on *Woo et al.* for disclosing the features of claim 1 that are deficient from the teachings of *Wageningen et al.* (e.g., maintaining a continuous aggregate count). The Applicant submits that *Woo et al.* do not disclose or suggest these features. Therefore, even assuming arguendo that there was sufficient motivation to combine these references (without conceding or acknowledging that there is), the combination would not result in an embodiment such as that described in claim 1 or any of those that depend therefrom.

The Applicant submits that claim 6 is patentable over the cited references for at least the reasons noted above as well as for the further features recited in these dependent claims. The Applicant respectfully requests that the Examiner withdraw the rejection of claim 6.

Claim 22 depends from claim 19. The Examiner does not rely on *Woo et al.* for disclosing the features of claim 19 that are deficient from the teachings of *Wageningen et al.* (e.g., maintaining a continuous aggregate count). The Applicant submits that *Woo et al.* do not disclose or suggest these features. Therefore, even assuming arguendo that there was sufficient motivation to combine these references (without conceding or acknowledging that there is), the combination would not result in an embodiment such as that described in claim 19 or any of those that depend therefrom.

The Applicant submits that claim 22 is patentable over the cited references for at least the reasons noted above as well as for the further features recited in these dependent claims. The Applicant respectfully requests that the Examiner withdraw the rejection of claim 22.

Newly added independent claim 32 is directed to an apparatus that includes a plurality of ingress ports and a plurality of egress ports. Each ingress port includes flow controllable queues to hold data and the data is organized in the queues by at least destination. Data can only be transmitted from a queue if flow is turned on for the queue. Each egress port is capable of receiving data from the queues and controlling the flow of data from the queues to itself. A controller maintains for each egress port a continuous aggregate count of data in each of the queues that is associated with the egress port and has the flow turned on. The controller determines a next queue to transmit data from based at least partially on the aggregate counts.

The applicant submits that claim 32 and dependent claims 33 and 34 are patentable over the cited references for at least reasons similar to those discussed above.

**AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111**

Serial Number: 10/622,285

Filing Date: July 18, 2003

Title: MAINTAINING AGGREGATE DATA COUNTS FOR FLOW-CONTROLLABLE QUEUES

Page 15

Dkt: INT-034 (P17398)

Assignee: Intel Corporation

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (215-230-5511) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 50-3228.

Respectfully submitted,

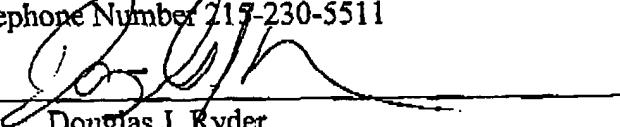
SUBHAJIT DASGUPTA ET AL.

By their Representatives,

Customer Number 46147

Telephone Number 215-230-5511

By

  
Douglas J. Ryder  
Reg. No. 43,073

Date 7/29/05

**CERTIFICATE UNDER 37 CFR 1.8:** The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, P.O.Box 1450, Alexandria, VA 22313-1450, on this 29 day of July, 2005.

Chris Hammond  
Name

Chris Hammond  
Signature